ABSTRACT

The present invention provides a hollow fiber membrane submodule comprising a hollow fiber membrane element, permeated fluid collectors, and snaps for securing the permeated fluid collectors to the hollow fiber membrane element, wherein the permeated fluid collectors are closely attached to the hollow fiber membrane element with the snaps in engagement therebetween and being arranged non-continuously around the outer periphery of each permeated fluid collector, and the permeated fluid collectors can be removed from and installed in the hollow fiber membrane element. With the hollow fiber membrane submodule of the present invention, when replacing the membranes, the hollow fiber membrane element is replaced with a new hollow fiber membrane element, and then the permeated fluid collectors can be reattached to the replaced element and reused. In addition, the snaps are capable of positioning the hollow fiber membrane element at the center of the hollow fiber membrane submodule within a pressure vessel, and also defining a flow path of a concentrated fluid with its non-continuous arrangement.